

VIRTUAL QUEUES IN A SINGLE QUEUE IN THE  
BANDWIDTH MANAGEMENT TRAFFIC-SHAPING CELL

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ABSTRACT OF THE DISCLOSURE

A method comprises using a class-based queue traffic shaper that enforces multiple service-level agreement policies on individual connection sessions by limiting the maximum data throughput for each connection. The class-based queue traffic shaper distinguishes amongst datapackets according to their respective source and/or destination IP-addresses. Each of the service-level agreement policies maintains a statistic that tracks how many datapackets are being buffered at any one instant. A test is made of each policy's statistic for each newly arriving datapacket. If the policy associated with the datapacket's destination is currently buffering, or holding, any datapackets, then the newly arriving datapacket is sent to be buffered too. This allows the longest waiting datapacket for the particular destination to be released and cleared from the buffer first.